

# Texas Brine Company, LLC 1301 Highway 70 Belle Rose, LA 70341

**F** 

Phone: 985-369-6657 Fax: 985-369-7873

April 10, 2013

Commissioner James H. Welsh P.O. Box 94275 Baton Rouge, LA 70804

# **RE:** In response to State of Louisiana Department of Natural Resources Office of Conservation's Second Amendment to Declaration of Emergency and Directive

Commissioner Welsh,

In response to the Second Amendment and Declaration of Emergency and Directive order issued by the Louisiana Department of Natural Resources (LDNR), Office of Conservation on September 25, 2012, Texas Brine Company, LLC (TPC) understands the seven items listed in the document.

In the above mentioned, TBC was specifically directed and ordered to perform certain tasks outlined in the above mentioned document. Below are the required responses, as directed.

- 1. TBC's counsel provided LDNR legal counsel with a response to Directives 1-3 on September 28, 2012.
- 2. TBC understands Directive 4, which is to provide all daily logs and field notes from all contractors conducting investigation into subsidence and natural gas bubbling. The Daily Action Summary and results for current information can be found in the Attachment section of this report.
- 3. TBC understands Directive 5, which directs TBC to immediately allow for split or share any sample taken on site related to Well 3A (Serial Number 974265), the cavern, other wells facilities or other site locations. The Daily Action Summary of today's collection can be found in Attachment section of this report.
- 4. TBC understands Directive 6, which directs TBC to immediately report the results (final and preliminary) of any tests, logs samples or data collection performed on Well 3A, the cavern, other wells, facilities or site locations that indicate a change in any previously known conditions related to the investigation of the subsidence or natural gas bubbling

- events, and continue to report any such results. The Daily Action Summary and the Results related to this Directive can be found in Attachment section of this report.
- 5. TBC understands the Directive 7, which states that TBC will provide a daily summary of all tests, or logs performed or samples taken from Well 3A and the cavern as well as any results of those tests or logs, including preliminary as of September 25, 2012 and going forward. The Daily Summary and Results related to this Directive can be found in Attachment section of this report.

Please note that the drilling rig used for the Observation Well 3A has been removed and the site is being rigged down and returned to pre-drilling condition. As such, daily drilling reports for this well have ceased. Plans are being made for longer term potential gas venting/flaring requirements and possible hydrocarbon material recover from Well 3A.

In addition, previous daily summary reports issued to LDNR have included significant duplicate information as there is a fair amount of overlap in the information requested in each of the Directives included in the September 25, 2012 order. All requested information associated with the Directives issued in the September 25, 2012 order are included in the Attachment section of this report.

TBC believes that the submittal of this report satisfies the requirements of the Declaration of Emergency and Directive issued on September 25, 2012. As directed this report is submitted by email to <a href="mailto:conservationorder@la.gov">conservationorder@la.gov</a>, ref. "Emergency Declaration-Texas Brine Company LLC-9/25/2012.

Bruce E. Martin

Vice President, Operations

Bana EMart

Texas Brine Company, LLC



			TBC Oxy Gran	d Bayou Data Managen	nent	-Environmental						
Contractor	Responsibilities		Collected By	Date Collected		Delivered to Lab	<b>Results from Lab</b>	Laboratory	Method	Date to Agencies		
Sage	Stationary Air Monitoring		ghnessy - 07:55 - 09:00 IV (Code Red) - 07:00 - 17:00	4/9/2013		NA	NA	NA	AreaRAE Monitors	4/10/2013		
	Residential Air Monitoring	suspend bii monitoring	s been requested to monthly residential air g. Therefore, Sage will nue these activities.	NA		NA	NA	NA	NA	NA		
	Gas Seep Sampling	No v	vork performed	4/9/2013		NA	NA	NA	NA	NA		
	Well Gas Sampling		aughnessy ORW 23 12:20-12:30	4/5/2013		Yes	Yes	Accutest	TO15	4/10/2013		
	Under Slab Gas Sampling	Delivery	to Laboratory Only Site 57	4/4/2013 (Collected by Tetra Te	ch)	Yes	Yes	Accutest	TO15	4/10/2013		
	Indoor Air Monitoring	Nov	vork performed	4/9/2013		NA	NA	NA	NA	NA		
Respec	Inclinometers/Tilt Meters	4/9/2013	No work conducted	No work conducted	NA	NA	NA	NA	NA	NA		
	InSAR Reflector Installations	4/9/2013	No work conducted	No work conducted	NA	NA	NA		NA	NA		
	Subsidence Survey-Fenstermaker	4/9/2013	No work conducted	No work conducted	NA	NA	NA		NA	NA		
	Shallow Geophone Installation	4/9/2013	No work conducted	No work conducted	NA	NA	NA		NA	NA		
	Deep Geophone Installation	4/9/2013	No work conducted	No work conducted	NA	NA	NA		NA			
	Amendment #3, Directive #2	4/9/2013	No work conducted	No work conducted NA		NA	NA		NA	NA		
Miller	Weekly Stability Survey	No V	Vork Performed	April 9, 2013		NA	NA	NA	NA	NA		
Ī	Misc. Survey Work	No V	Vork Performed	April 9, 2013		NA	NA	NA	NA	NA		
	Sinkhole Hydro/Perimeter Survey	No V	Vork Performed	April 9, 2013		NA	NA	NA	NA	NA		
Pisani	Surface Water		NA	NA		NA	NA	NA	NA	NA		
	Industrial Well Water		NA	NA		NA	NA	NA	NA	NA		
	MRAAWell Water		NA	NA		NA	NA	NA	NA	NA		
	Geoprobe Wells		NA	NA		NA	NA	NA	NA	NA		
				Grand Bayou Well 3	3A							
	Daily Operations at 3A					Summ	nary of Today's ev	<u>ents</u>				
							Oxy 3A					
	4/10/2013	am 501.8 4/10/2013										
							Relief Well #1					
	4/10/2013					See OR	W-01 Flare Spread	Isheet				

Laboratory

Lab Contact

Laboratory Lab Contact



#### **Daily Action Summary**

#### **April 9, 2013**

#### **Stationary Air Monitoring**

- Steve Shaughnessy onsite from 07:55 to 09:00. Changed out the monitors between 08:13 and 08:41. Collected data from the monitoring database and forwarded to Jill Martin in the Baton Rouge office for processing.
- Pete Hyatt IV of Code Red (monitor sub-contractor) onsite from 07:00 to 17:00. Assisted in battery change outs and maintenance of the monitoring equipment.

#### **Residential Air Monitoring**

• Sage has been requested to suspend bimonthly residential air monitoring. Therefore, Sage will discontinue these activities. The last event was conducted on March 26, 2013.

#### **Gas Seep Sampling**

Not Scheduled

#### **Well Gas Sampling**

Accutest provided TO15 results of the gas samples collected on April 5, 2013 from ORW
23, which is located at the corner of Sauce Piquante Street and Gumbo Street. Isotopic
analytical results are not yet available.

#### **Under Slab Gas Sampling**

• Accutest provided TO15 results of the under slab gas samples collected at Site 57 by Tetra Tech on April 4, 2013. Isotopic analytical results are not yet available.

#### **Air Indoor Monitoring**

Not Scheduled

\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

	South-most Pipeline Site						Middl	e-most Pipeli	ne Site			North-most Pipeline Site On Drill Rig Boom									Relief Well				
			ST-3					ST-2					ST-1					OG 3A-1					RW-1		
		Non-					Non-					Non-					Non-								
		Methane					Methane					Methane					Methane					Non-			
		VOC					VOC					VOC					VOC					Methane			
Date-Time *	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	SO2 (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)
04/09/2013 01:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9
04/09/2013 02:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
04/09/2013 03:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
04/09/2013 04:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
04/09/2013 05:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
04/09/2013 06:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9
04/09/2013 07:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9
04/09/2013 08:00:00 AM	<1.0	<1.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 09:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 10:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 11:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 12:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 01:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 02:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 03:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.1	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 04:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 05:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 06:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.2
04/09/2013 07:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 08:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 09:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 10:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 11:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.0	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 12:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9

Notes:

New York   Section   Sec		Sample Date: 4/4/2013 Site 57 House	Sample Date: 4/4/2013 Site 57 Shed
SPL Sample ID	I UC Constituents	Site 57 House	Site 57 Siled
Pollutant		1400 GANYO Y	4400 01 770 0
Nitrogen   92.568   98.295		_	
CO <sub>2</sub> 5.863         0.762           Behane         1.269         0.943           Behane         ND         ND         ND           Propane         ND         ND         ND           ND         ND         ND         ND           Butane         ND         ND         ND           ND         ND         ND         ND           Subscience         ND         ND         ND           Hetranes         ND         ND         ND           Hepanes         ND         ND         ND           Sulfides           Sulfides           Sulfides           Pollutant         ppm,         ppm,           Hydrogen Sulfide         ND         ND         ND           Onlichyl Sulfide         -1.0         -1.0         -1.0         On           Unkown Sulfides         ND         ND         ND         ND           MD         ND         ND         ND         ND           Eityl Mercaptans         ND         ND         ND         ND           Eityl Mercaptans         ND         ND         ND         ND			
Methane         1.269         0.943           Ethane         ND         ND           Propane         ND         ND           Iso-butane         ND         ND           Butane         ND         ND           ND         ND         ND           So-pentane         ND         ND           Pollutane         ND         ND           Hexanes         ND         ND           Heptanes+         ND         ND           SPI. Sample ID         1408-SAPIQ-H         1408 SAPIQ-S           Pollutant         ppm,         ppm,           Hydrogen Sulfide         ND         ND           Action Jy Sulfide         1.0         <-1.0			
Propage			
Propage   ND			
Sos-butane			
ND			
ND	n-Butane	ND	ND
Hexanes	Iso-pentane	ND	ND
Sulfides   SPL Sample ID	n-Pentane	ND	ND
Sulfides	Hexanes	ND	ND
SPL Sample ID	Heptanes+	ND	ND
Pollutant	Sulfides		
Hydrogen Sulfide	SPL Sample ID	1408-SAPIQ-H	1408 SAPIQ-S
Carbonyl Sulfide	Pollutant	$\mathbf{ppm}_{\mathbf{w}}$	$\mathbf{ppm}_{\mathbf{w}}$
Dimethyl Sulfide	, ,		ND
Unkown Sulfides	•		
Methyl Mercaptans	-		
Ethyl Mercaptans			
Isopropyl Mercaptans   ND	* 1		
ND			
ND			
ND	., .		
ND			
ND			
Carbon Disulfide         ND         ND           Unkown Disulfides         ND         ND           Thiophene         ND         ND           Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm, ppm, ppm, ppm, ppm, ppm, ppm, ppm,			
Cinkown Disulfides			
Toxics Detected			
Name		ND	ND
Pollutant         ppm,         ppm,           Benzene         0.0025         0.0036           Carbon Disulfide         0.0019         ND           Chloroform         0.00074         ND           Chloromethane         ND         0.00058           Cyclohexane         0.0066         0.0024           Dichlorodifluoromethane         ND         0.00052           P-Dichlorobenzene         0.0021         ND           Ethylbenzene         0.0021         ND           Hethylenzene         0.0015         0.0065           (n) Hexane         0.0101         0.0043           Methylen Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           ND         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           2,2,4-Trimethylbenzene         0.00082         0.0065           2,2,2-Trimethylbenzene         ND         ND           Totluene         0.004         0.0118           Trichloroethylene         ND         ND	Toxics Detected		
Pollutant         ppm,         ppm,           Benzene         0.0025         0.0036           Carbon Disulfide         0.0019         ND           Chloroform         0.00074         ND           Chloromethane         ND         0.00058           Cyclohexane         0.0066         0.0024           Dichlorodifluoromethane         ND         0.00052           P-Dichlorobenzene         0.0021         ND           Ethylbenzene         0.0021         ND           Hethylenzene         0.0015         0.0065           (n) Hexane         0.0101         0.0043           Methylen Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           ND         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           2,2,4-Trimethylbenzene         0.00082         0.0065           2,2,2-Trimethylbenzene         ND         ND           Totluene         0.004         0.0118           Trichloroethylene         ND         ND	Accutest Sample ID	IR33592-1	IR33592-2
Benzene   0.0025   0.0036     Carbon Disulfide   0.0019   ND     Chloroform   0.00074   ND     Chloromethane   ND   0.00058     Cyclohexane   0.0066   0.0024     Dichlorodifluoromethane   ND   0.00052     Dichlorodifluoromethane   ND   0.00052     P-Dichlorobenzene   0.0021   ND     Ethylbenzene   0.0015   0.0065     (n) Hexane   0.0101   0.0043     Methylene Chloride   0.0012   0.00085     Methyl Ethyl Ketone   0.0175   0.0049     Methyl Isobutyl Ketone   0.0175   0.0049     Methyl Isobutyl Ketone   0.0013   0.0012     Styrene   ND   ND   ND     1.2,4 Trimethylbenzene   0.0009   0.0368     1.2,4-Trimethylbenzene   0.0009   0.0368     2.2,4-Trimethylpentane   ND   0.0059     Tetrachloroethylene   ND   ND     Toluene   0.004   0.0118     Trichloroethylene   0.00016   ND     Xylenes (total) m.p plus o   0.0069   0.019     TOTAL   0.059   0.105     Non-Toxics Detected   ND   ND     Styrene   0.0024   0.0018     Ethyl Acetane   0.00285   0.781     Acetone   0.0285   0.781     Acetone   0.0029   0.003     Isopropyl Alcohol   1.44   0.0116     Tertiary Butyl Alcohol   0.0015   0.0021	•		
Carbon Disulfide         0.0019         ND           Chloroform         0.00074         ND           Chloromethane         ND         0.00058           Cyclohexane         0.0066         0.0024           Dichlorodifluoromethane         ND         0.00052           p-Dichlorobenzene         0.0021         ND           Ethylbenzene         0.0015         0.0065           (n) Hexane         0.0101         0.0043           Methylene Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           ND         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         ND           Totluene         ND         ND           Totluene         0.004         0.0118           Trichloroethylene         ND         ND           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105		== .	
ND			
Cyclohexane         0.0066         0.0024           Dichlorodifluoromethane         ND         0.00052           p-Dichlorobenzene         0.0021         ND           Ethylbenzene         0.00015         0.0065           (n) Hexane         0.0101         0.0043           Methylene Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           1.2,4 Trimethylbenzene         0.0019         0.0368           1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         ND           Totrachloroethylene         ND         ND           Totluene         0.004         0.0118           Trichloroethylene         0.0004         0.0118           Trichloroethylene         0.00069         0.019           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           TOTAL         0.059         0.105           Nor-Toxics Detected           Acetose         0.172	Chloroform	0.00074	ND
Dichlorodifluoromethane	Chloromethane	ND	0.00058
D-Dichlorobenzene   D.0021	Cyclohexane	0.0066	0.0024
Ethylbenzene         0.0015         0.0065           (n) Hexane         0.0101         0.0043           Methylene Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           1,2,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         ND           Totrachloroethylene         ND         ND           Toluene         0.004         0.0118           Trichloroethylene         0.004         0.0118           Trichloroethylene         0.00069         0.019           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm,         ppm,           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm,         ppm,           m-Dichlorobenzene	Dichlorodifluoromethane	ND	0.00052
(n) Hexane			
Methylene Chloride         0.0012         0.00085           Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4 Trimethylpentane         ND         0.0059           Petrachloroethylene         ND         ND           Toluene         0.004         0.0118           Trichloroethylene         0.0004         0.0118           Kylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm,           Accetone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND     <	•		
Methyl Ethyl Ketone         0.0175         0.0049           Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           1,2,4 Trimethylbenzene         0.0019         0.0368           1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         0.0059           Tetrachloroethylene         ND         ND           Toluene         0.004         0.0118           Trichloroethylene         0.0004         0.0118           Trichloroethylene         0.00069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm,         ppm,           Acetone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003 <tr< td=""><td></td><td></td><td></td></tr<>			
Methyl Isobutyl Ketone         0.0013         0.0012           Styrene         ND         ND           1.2,4 Trimethylbenzene         0.0019         0.0368           1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         0.0059           Etrachloroethylene         ND         ND           Foluene         0.004         0.0118           Trichloroethylene         0.00016         ND           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutat         ppm,         ppm,           Acctone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isoproyl Alcohol         1.44         0.0116 <td></td> <td></td> <td></td>			
ND			
1,2,4 Trimethylbenzene   0.0019   0.0368     1,3,5 Trimethylbenzene   0.00082   0.0065     2,2,4 Trimethylpentane   ND   0.0059     Tetrachloroethylene   ND   ND     Toluene   0.004   0.0118     Trichloroethylene   0.00016   ND     Xylenes (total) m,p plus o   0.0069   0.019     TOTAL   0.059   0.105     Non-Toxics Detected			
1,3,5 Trimethylbenzene         0.00082         0.0065           2,2,4-Trimethylpentane         ND         0.0059           Tetrachloroethylene         ND         ND           Toluene         0.004         0.0118           Trichloroethylene         0.00016         ND           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           Accutest Sample ID         JB33592-1         JB33592-2           Pollutant         ppm <sub>v</sub> ppm <sub>v</sub> Acctone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021	· ·		
ND			
ND	· · · · · · · · · · · · · · · · · · ·		
Toluene	* 1		
Trichloroethylene         0.00016         ND           Xylenes (total) m,p plus o         0.0069         0.019           TOTAL         0.059         0.105           Non-Toxics Detected           JB33592-1         JB33592-2           Pollutant         ppm,         ppm,           Acetone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
Xylenes (total) m,p plus o   0.0069   0.019     TOTAL   0.059   0.105     Non-Toxics Detected			
Non-Toxics Detected   JB33592-1   JB33592-2     Pollutant   ppm <sub>v</sub>   ppm <sub>v</sub>     Acetone   0.172   0.0496     m-Dichlorobenzene   0.0024   0.0018     Ethyl Acetate   0.003   ND     Ethyl Acetate   0.0285   0.781     4-Ethyltoluene   0.00061   0.0032     Freon 113   ND   ND     Heptane   0.0029   0.003     Isopropyl Alcohol   1.44   0.0116     Tertiary Butyl Alcohol   0.0015   0.0021	Xylenes (total) m,p plus o	0.0069	0.019
Accutest Sample ID   JB33592-1   JB33592-2	TOTAL	0.059	0.105
Pollutant         ppm,         ppm,           Acetone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021	Non-Toxics Detected		
Acetone         0.172         0.0496           m-Dichlorobenzene         0.0024         0.0018           Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021	Accutest Sample ID	JB33592-1	JB33592-2
m-Dichlorobenzene 0.0024 0.0018 Ethyl Acetate 0.003 ND Ethanol 0.0285 0.781 4-Ethyltoluene 0.00061 0.0032 Freon 113 ND ND Heptane 0.0029 0.003 Isopropyl Alcohol 1.44 0.0116 Tertiary Butyl Alcohol 0.0015 0.0021	Pollutant		
Ethyl Acetate         0.003         ND           Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
Ethanol         0.0285         0.781           4-Ethyltoluene         0.00061         0.0032           Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
4-Ethyltoluene     0.00061     0.0032       Freon 113     ND     ND       Heptane     0.0029     0.003       Isopropyl Alcohol     1.44     0.0116       Tertiary Butyl Alcohol     0.0015     0.0021	•		
Freon 113         ND         ND           Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
Heptane         0.0029         0.003           Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
Isopropyl Alcohol         1.44         0.0116           Tertiary Butyl Alcohol         0.0015         0.0021			
Tertiary Butyl Alcohol 0.0015 0.0021			
Tetrahydrofuran 0.00054 ND	Tetrahydrofuran		
Trichlorofluoromethane ND ND			

#### Texas Brine - Belle Rose, Louisiana Well Gas Sampling Results

	Sample Date: 4/5/2013
	ORW 23
LHG Constituents	
SPL Sample ID	TB ORW 23
Pollutant	Mole %
Nitrogen	2.737
CO <sub>2</sub>	1.061
Methane	92.822
Ethane Propane	2.406 0.650
Iso-butane	0.030
n-Butane	0.114
Iso-pentane	0.030
n-Pentane	0.008
Hexanes+	0.001
Heptanes+	ND
Sulfides	
SPL Sample ID	TB ORW 23
Pollutant	$\mathbf{ppm_w}$
Hydrogen Sulfide	ND
Carbonyl Sulfide	ND
Dimethyl Sulfide	ND
Unkown Sulfides	ND
Methyl Mercaptans Ethyl Mercaptans	ND ND
Isopropyl Mercaptans	ND ND
n-Propyl Mercaptans	ND
sec-Butyl Mercaptans	ND
tert-Butyl Mercaptans	ND
n-Butyl Mercaptans	ND
pri-Amyl Mercaptans	ND
Carbon Disulfide	ND
Unkown Disulfides	ND
Thiophene	ND
Toxics Detected	
Accutest Sample ID	JB33593-1
Pollutant	$\mathbf{ppm}_{\mathrm{v}}$
Benzene	8.21
Carbon Disulfide	ND
Chloroform	0.27
Chloromethane Cyclohexane	ND ND
Dichlorodifluoromethane	ND
Ethylbenzene	0.0632
(n) Hexane	0.478
Methylene Chloride	ND
Methyl Ethyl Ketone	ND
Methyl Isobutyl Ketone	ND
Styrene	0.112 ND
1,2,4 Trimethylbenzene 1,3,5 Trimethylbenzene	ND ND
2,2,4-Trimethylpentane	ND
Tetrachloroethylene	ND
Toluene	0.782
Trichloroethylene	ND
Xylenes (total) m,p plus o	0.0399
TOTAL	9.96
Non-Toxics Detected	
Accutest Sample ID	JB33593-1
Pollutant Acetone	ppm <sub>v</sub> ND
Ethanol	74.9
4-Ethyltoluene	ND
Freon 113	ND
Heptane	ND
Isopropyl Alcohol	3.04
Tertiary Butyl Alcohol	ND
Trichlorofluoromethane	ND



Well Gas Sampling Location
April 5, 2013



\*Time indicates start of time period (ex. 12:00:00 AM gives the time period 12:00:00 AM to 12:59:59 AM)

	South-most Pipeline Site Middle-most Pipeline Site									North-most Pipeline Site On Drill Rig Boom							Relief Well								
			ST-3					ST-2					ST-1					OG 3A-1					RW-1		
		Non-					Non-					Non-													
		Methane					Methane					Methane					Non-					Non-			
		VOC					VOC					VOC					Methane					Methane			
Date-Time *	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)	O2 (%)	CO (ppm)	(ppm)	H2S (ppm)	LEL (%)		SO2 (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)		CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	O2 (%)
04/09/2013 05:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	0.0	0.0	20.9
04/09/2013 06:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9
04/09/2013 07:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	<1.0	0.0	<1.0	0.0	20.9	0.0	<1.0	<1.0	0.0	20.9
04/09/2013 08:00:00 AM	<1.0	<1.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9	<1.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 09:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 10:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 11:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 12:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 01:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 02:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 03:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.1	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 04:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 05:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 06:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.2
04/09/2013 07:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	21.1
04/09/2013 08:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 09:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 10:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.2	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/09/2013 11:00:00 PM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	21.0	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 12:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 01:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 02:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 03:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 04:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9
04/10/2013 05:00:00 AM	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	0.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	0.0	0.0	<1.0	0.0	20.9	<1.0	<1.0	<1.0	0.0	20.9

Notes:

# **RESPEC Consulting & Services**

# Texas Brine, L.L.C. Assumption Parish, Louisiana Daily Field Report

Report By: David	d Gnage	<u></u>	Da	ate: 4-9-13				
Company: RESP	PEC	•	Work Order #:	()				
Personnel		Company	Job Title					
Time Onsite:	Start Tim	e: NA End Time:	NA					
<b>Equipment Onsite</b> :								
Daily Activity:	No Field	Work Conducted. RESPEC not of	on-site.					
Proposed Schedule:	12 <sup>th</sup> ) to re	will be onsite Thursday and Frida econnoiter various gas bubble and to determine which of the MRA ling.	proposed geoprobe	well sites,				
			Initials:	DJG				

# **ME&A Daily Action Summary**

April 9, 2013

# **Subsidence Survey:**

No Work Done

# Sinkhole Perimeter/Hydrographic Survey:

No Work Done

# **Support Sinkhole Cleanup**

No Work Done

### Misc. Survey Work

No Work Done

# Michael Pisani & Associates

## Texas Brine, L.L.C. Assumption Parish, Louisiana Daily Field Report

Report By:	Patrick Ritchie					Date Work Order		_
Company:	MP&A					Work Order	# 80-05	_
Health and S	Safety Meeting	YES		NO				
Weather:	80 F mostly cloudy						_	
	Personnel		Company			Job Title		
Patrick Ritch		MP&A			Environme	ental Scientis		_
								<u> </u>
								_
		-			-			_
								_
								_
								_
Site Acti	vities: Start Time	9:15	End Time	14:00				
			<u> </u>		_			
Equipment	On-site: Airboat							
Daily Activi	itv:							
	situ monitoring surface v	vater transe	ct and industria	al water we	ell locations			
	ter level for the industrial							
	me of completion:							
On-going								
D 1	1 1 1							
Proposed so		votor tronco	at and industria	al vyatam vya	all logotions			
	situ monitoring surface v ter level for the industrial			ai watei we	en iocations			
	ssure and water level at T							
	ratory samples from the M							
	• •							
On-going							<del></del>	
						Initials:	PMR	